

REMARKS

By the above amendment, independent claims 24 and 30, and the dependent claims, where appropriate, have been amended in a manner which is considered to overcome the rejection under 35 USC 112, first and second paragraphs, as well as to recite features which more clearly distinguish the claimed invention from the prior art, as will be discussed below.

As to the rejection of claims 24 - 26 and 29- 35 under 35 USC 112, first paragraph, applicants note that independent claims 24 and 30 and the dependent claims have been amended to recite the feature that electric power is applied to the plate for generating the plasma in claim 24 and electric power is applied to the plate, as recited in claim 30. As recognized by the Examiner, page 11, lines 16 - 18 of the specification, recites the feature that the antenna bias power supply 123 applies to the plate 115 the bias of a frequency of, for example, 100kHz or several MHz to several tens of 10MHz through the disk formed conductor 111, thereby controlling the reaction of the surface of plate 115. Furthermore, page 19, lines 19 - 21 describe the feature that "bias voltage of several tens of volts to hundreds of volts is applied to the plate 115 ..." (emphasis added). Thus, applicants submit that the amendment of the independent claims 24 and 30 and the dependent claims to utilize the phrase "is applied" to the plate is clearly supported in the specification, and the rejection under 35 USC 112, first paragraph, should now be overcome.

As to claims 26 and 29, the Examiner indicates that the recitation of the plate being made of conductive material is also considered new matter since the plate is disclosed made "of pure silicon". The Examiner is referred to the specification at page 11, lines 19 - 22 which indicates that in the oxide film etching process, reaction of radicals on the surface of the plate 115 can be controlled and percentage of

radicals can be adjusted by using high purity silicon and carbon as the material of plate 115. In light of this disclosure, claims 24 and 26 have been amended to recite the feature that the plate is made of "silicon and carbon" and deleting the previous recitation of "electrically conductive material", such that the rejection under 35 USC 112, first paragraph, should now be overcome. It is noted, however, as described above electric power is applied to the plate such that the plate can be considered to be made of electrically conductive material. For the foregoing reasons, applicants submit that all claims in this application should now be considered to be in compliance with 35 USC 112, first paragraph.

With regard to the rejection of claims 24 - 26 and 29 - 35 under 35 USC 112, second paragraph, as being indefinite with respect to the recitation of "almost in contact", by the present amendment, the language of "almost in contact" has been deleted from the claims even though utilizing throughout the specification, with claims 24 and 30 now reciting the feature that the optical transmitter is disposed so as to be spaced from a back surface of the plate at a sufficiently small distance so as to substantially prevent abnormal discharge thereat. More particularly, although the Examiner contends that Fig. 2 appears to show the end face of the optical transmitter in contact with the back surface of the plate 115, it is noted that the specification clearly describes that the optical transmitter 141 is installed so that it is "almost in contact" with the back of the plate 115. See page 15, lines 10 and 11 and page 18, lines 7 and 8, for example. Applicants submit that the recitation of "almost in contact" clearly indicates that there is a small space between the end face of the optical transmitter 141 and the back surface of the plate 115, since otherwise, rather than "almost in contact", the description would be that the optical transmitter 141 is in contact with the back surface of the plate, which is not described in the specification.

Further, Fig. 9 of the drawings, shows the recited spacing, and page 18, lines 8 - 11 of the specification further describes the avoidance of abnormal discharge. Thus, applicants submit that the specification describes the fact that there is a small space between the end face of the optical transmitter and the back surface of the plate which is sufficiently small so as to substantially prevent abnormal discharge thereat, which feature is now recited in independent claims 24 and 30, and illustrated in Fig. (E) of Appendix A submitted with the Supplemental Response filed April 24, 2006. Thus, applicants submit that independent claims 24 and 30 and the dependent claims should now be considered to be in compliance with 35 USC 112, second paragraph.

Applicants note that by the present amendment, the independent and dependent claims have been amended to clarify further features of the present invention, as will be discussed below.

The rejection of claims 24 - 26 and 29 - 35 under 35 USC 102(e) as anticipated by or, in the alternative, under 35 USC 103(a) as obvious over Grimbergen et al (US 6,390,019) is traversed insofar as it is applicable to the present claims and reconsideration and withdrawal of the rejection are respectfully requested.

As to the requirements to support a rejection under 35 USC 102, reference is made to the decision of In re Robertson, 49 USPQ 2d 1949 (Fed. Cir. 1999), wherein the court pointed out that anticipation under 35 U.S.C. §102 requires that each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference. As noted by the court, if the prior art reference does not expressly set forth a particular element of the claim, that reference still may anticipate if the element is "inherent" in its disclosure. To

establish inherency, the extrinsic evidence "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." Moreover, the court pointed out that inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.

As to the requirements to support a rejection under 35 USC 103, reference is made to the decision of In re Fine, 5 USPQ 2d 1596 (Fed. Cir. 1988), wherein the court pointed out that the PTO has the burden under '103 to establish a prima facie case of obviousness and can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. As noted by the court, whether a particular combination might be "obvious to try" is not a legitimate test of patentability and obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. As further noted by the court, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

Irrespective of the position set forth by the Examiner concerning the disclosure of Grimbergen et al, applicants submit that Grimbergen et al provides no disclosure in the sense of 35 USC 102 or teaching in the sense of 35 USC 103 of a plate, as defined, which has electric power applied thereto for generating the plasma, wherein an optical transmitter is disposed so as to be spaced from a back surface of the plate at a sufficiently small distance so as to substantially prevent abnormal

discharge thereat, and wherein a holder is disposed at an upper side of the plate so as to hold the optical transmitter on the upper part of the vacuum vessel with respect to the back surface of the plate so as to be independently detachable to outside of the vacuum vessel, as recited in independent claims 24 and 30. Applicants note that applicants submitted an exhibit labeled Appendix A on April 24, 2006 showing the tolerance relationship of the spacing of the end of the transmitter from the plate which substantially prevents abnormal discharge from occurring, as represented by Fig. (C) thereof, and Grimbergen et al does not disclose or teach this structural arrangement. In fact, applicants have difficulty understanding what is considered to be a plate in Grimbergen et al and what is considered to be the optical transmitter since such structure appears to be connected as one component and is not independently detachable as provided by the present invention. Thus, applicants submit that independent claims 24 and 30 and the dependent claims patentably distinguish over Grimbergen et al in the sense of 35 USC 102 and/or 35 USC 103.

With respect to the dependent claims, applicants note that the dependent claims recite further features which are not disclosed or taught by Grimbergen et al including the diameter-depth ratio, the plate being made of silicon and carbon and the provision of a disk formed member as recited in relation to the plate. Further, new claims 36 and 37 recite that the plate having the through-hole has process gas supplied through the through-hole to the inside of the process chamber, noting that light from the process chamber is received at the end face of the optical transmitter via the through-hole, and it is readily apparent that such feature is also not disclosed or taught by Grimbergen et al. Thus, applicants submit that the dependent claims recite further features which patentably distinguish over Grimbergen et al, and should be considered allowable thereover.

In view of the above amendments and remarks, applicants submit that all claims present in this application should now be in condition for allowance and issuance of an action of a favorable nature is courteously solicited.

To the extent necessary, applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (Case: 520.39649CX3), and please credit any excess fees to such deposit account.

Respectfully submitted,

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